DOCUMENT RESUME

ED 294 467 HE 021 395

AUTHOR Imrie, Bradford W.
TITLE In Search of Academic Excellence: Samples of Experience.
PUB DATE Jul 84
NOTE 25p.; Paper presented at the International Conference on Improving University Teaching (10th, College Park, MD, July 4-7, 1984).
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Standards; Educational Change; Educational Environment; *Educational Experience; *Faculty Development; Higher Education; Problem Solving; *Staff Development; Student College Relationship; Teacher Effectiveness; Teacher Student Relationship; *Teaching Methods

ABSTRACT

Improved teaching performance, changes in teaching methods, and changes in staff/faculty development are discussed. For each "sample of experience" emphasis is placed on student learning, assessment of student performance, and the learning experience of the individual student. Improved teaching performance requires institutional policies and their implementation in deeds rather than words. Changes in teaching methods include optimization of diagnostic testing, mastery learning, problem solving, and discussion techniques. These changes should involve the teacher and student in problem solving. Changes in faculty/staff development reflect movement toward the professionalization of departments and universities in a context that offers freedom of thought and control of quality. A critical issue is the quality of management at the institutional, departmental, and personal level. 90 references. (SM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED294467

IN SEARCH OF ACADEMIC EXCELLENCE : SAMPLES OF EXPERIENCE

Bradford W Imrie

University Teaching and Research Centre
Victoria University of Wellington
New Zealand

A paper invited for presentation as part of a Seminar:
IN SEARCH OF ACADEMIC EXCELLENCE, at the Tenth
International Conference on IMPROVING UNIVERSITY TEACHING
July 4-7, 1984, at the University of Maryland.

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Bradford W Imrie
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Author's Note:

In 1974 I travelled from the University of Leeds to the University of Heidelberg to present a paper at the First IUT Conference. At that conference I had the pleasure of meeting our conference host Professor Massey, our Seminar chairperson Professor Seldin and also Professor McKeachie. I mention these three persons because of the relevance of their experience to the theme of the seminar.

To Ben Massey I offer my sincere congratulations on this tenth IUT anniversary, for the personal and professional qualities which have made the IUT Conference a vital part of the continuing search for academic excellence. To Peter Seldin my appreciation for his courteous persistence in keeping in touch with me and for this particular opportunity to learn from his experience because there are valuable insights for higher education to be obtained from management analogies. Specifically this paper includes some samples of Bill McKeachie's experience because of the excellence of his contributions to the literature of higher education.

HE021 395

BEST COPY AVAILABLE

IN SEARCH OF ACADEMIC EXCELLENCE : SAMPLES OF EXPERIENCE

Bradford W Imrie

INTRODUCTION

This paper has been prepared in response to an invitation to participate in a seminar, 'In Search of Academic Excellence'. The invitation suggested that the paper should focus on three topics: (a) improving teaching performance (b) changes in teaching methods and (c) changes in staff/faculty development. The time available for seminar presentation was specified as 15 minutes. Accordingly, the samples of experience discussed in this paper are highly selective due to the following considerations: (1) the time available to prepare and present the paper, (2) the comprehensive nature of the topics, (3) the international context of the conference, and (4) the venue of the Tenth International Conference on Improving Teaching.

During the last decade, in particular, much has been written about the topics addressed in this paper but not much can be generalised and substantiated. For each topic, therefore, there is particular reference to student learning, assessment of student performance and the learning experience of the individual student.

However, there are two generalisations which are worth considering as samples of experience. Ten years ago, McKeachie (1974) wrote about the decline and fall of the laws of learning and his paper was reprinted in 'How Students Learn', a selection of readings in higher education edited by Entwistle and Hounsell (1975). McKeachie commented:

> 'It is fitting that I learned from E L Thorndike's grandson, Robert M Thorndike, what I regard as the best generalisation we can currently make. He suggests that knowledge of results is informative and when the learner knows or is told what to do to correct errors.' (McKeachie, 1975:47)

A second generalisation is offered by Ausubel (1968):

> 'If I had to reduce all of educational psychology to just one principle, I would say this : The most important single factor influencing learning is what the learner already knows. Ascertain this and teach accordingly.' (p iv)

Both generalisations emphasise the relationship between learning and assessment with reference to the learner. To be effective, teaching performance, teaching methods and faculty development require teachers to be knowledgeable about learning and assessment so that they can be professionally competent in managing the conditions of learning for the benefit of individual

students. There are, of course, other considerations and McKeachie and Kulik (1975) offer some commonsense:

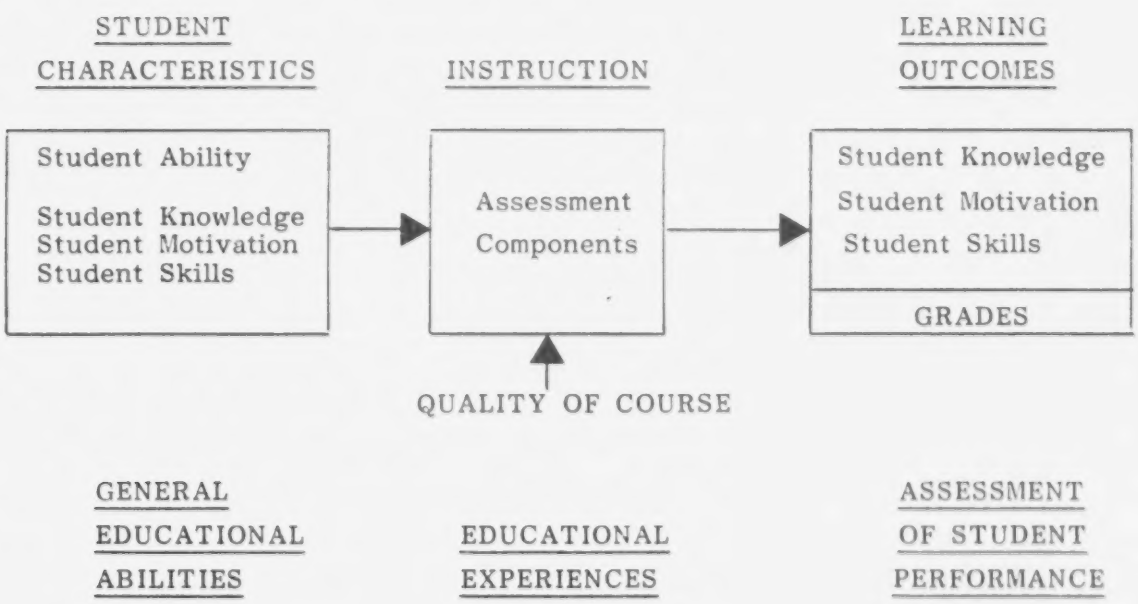
> 'Unfortunately simple generalisations are suspect. Progress has been slow not just because of our lack of theorists and researchers, but because education really is complicated.' (p 199)

Developing academic excellence in terms of teaching and learning is an exercise in solving problems posed by the interactions between teacher, subject and student in a formal course of education or programme of study. Models are particularly useful in problem solving and move beyond the limitations of generalisations. The teacher-subject-student interactions are described by Hyman (1970) in a model which considers the contexts of time and place and stresses the potential of dynamic relationships between teacher and subject, teacher and student.

> 'Models of the instructional process may limit one's awareness and ability to change but, properly conceived, they can be tools to increase one's capacity for perceiving and understanding the complexity of this very special changing human interaction.' (McKeachie, 1974:187)

Models, therefore, have the potential to assist with solving the problem of optimising the teaching-learning transactions in our educational organisations. The concept 'organisation' is used rather than 'institution' because of the potential usefulness of management concepts relevant to formal teaching and faculty development.

FIG. 1 A MODEL FOR STUDENT EDUCATIONAL EXPERIENCE (Imrie, 1983)



A model which incorporates the generalisations stated previously and subsumes Hyman's interaction model is shown in Fig 1. This model of student educational experience (Imrie, 1983) is based on a model of school learning (Bloom, 1976); it also incorporates the elements of a model described by Smith (1960) which classifies into three categories 'all the variables involved in and related to the actions which make up teaching'. In Fig 1 the educational experiences of the course are depicted as assessment components and this concept of a course is developed further by Imrie (1983) as a student-referenced assessment model.

The traditional final or end of course examination is a particular category of assessment of student performance; it is often an inadequate sample of student experience on which to base judgement of achievement and potential ability. The examination has had a major effect in shaping student response to formal courses but has not been adequately evaluated as a measuring instrument either for aptitude treatment interaction or for justifying inference of ability. In rethinking student achievement McLean (1983) notes that, 'Just because a student gets a question wrong doesn't mean the student doesn't know the answer.'

Supplementing such models are taxomonic concepts of levels of learning or education. Well-known examples are those relating to educational objectives (and assessment) in the cognitive domain (Bloom et al. 1956) and in the affective domain (Krathwohl et al. 1964). While Bloom's ladder analogy illustrates the essential relationship between affective and cognitive experiences of learning, Steinaker and Bell (1979) offer a different approach to teaching and learning in the form of a taxonomy of educational experience. The 'Experiential Taxonomy' provides a powerful structure for the management of learning experiences to improve teaching performance and methods, and for the organisation of faculty development. Essentially the course interaction experiences are categorised for the student as exposure, participating, identifying, internalising and disseminating.

Generalisations, models and taxonomies all provide opportunities for faculty to learn from experience so that so-called trial and error methods are replaced by strategies which adapt and apply successful principles and procedures in pursuit of academic excellence.

IMPROVING TEACHING PERFORMANCE

It has been argued that the improvement of teaching or teacher performance is for the purpose of improving student learning. Appropriate outcomes might then include that the student knows how to learn, passes examinations, and retains and values learning. In the model (Fig 1) these learning outcomes

represent changes in student quality as a result of the educational experiences which represent (to the student) the quality of the course. A distinction is made between student quality (course-specific) and generalised student ability with reference to Vernon's (1961) model of the structure of educational abilities.

From the teaching point of view the model identifies factors with potential for the improvement of student quality. First, course quality includes such considerations as course management, subject competence, teacher enthusiasm, communication skills and clear consistent statements of assessment requirements. With an understanding of principles of learning and of the implications of time for course design and assessment, all of these considerations are teacher controlled and have improvement potential. Time and place contexts (Hyman, 1970) deal with the significance of timetabled time for teaching, non-timetabled time for learning, the duration of the course, and the time allocation priorities of students coping with the assessment requirements of other courses and other commitments. Entwistle (1976) has also commented that assessment provides the main incentive for students so that study behaviour is affected by the timing and the form of examinations. The overall quality of a course is then determined by the correspondence of assessment requirements with course objectives as perceived and experienced by each student (Imrie, 1983).

Second, if teaching performance is to improve student performance then there is potential for interaction between the course experiences managed by the teacher and the student entry characteristics (specific to the course) of motivation, knowledge and student skills. Of particular significance is the student skills factor which has only recently been recognised as an important teacher-student responsibility in the context of a course of study. In 1976, Goldschmid and Goldschmid recommended the inclusion of 'learning skills' in (inadequate) aptitude treatment interaction studies 'to take into account the specific ways in which an individual goes about learning'. In 1975, in their concluding comments on 'How Students Learn', Entwistle and Hounsell stated that:

> 'Teaching strategies, if they are to be fully effective, may need to be complemented by conscious and carefully constructed attempts to foster the development of appropriate study skills and habits.' (p 191)

McKeachie (1983) advocates 'learning how to learn' courses for students, which 'should first develop confidence in techniques that emphasise meanings and, second, ability to apply the techniques'. McKeachie admits that this outcome has developed from intermittent studies over a period of 35 years.

With the benefit of hindsight it is regrettable that the teacher's professional responsibility for student development of relevant learning skills was not recognised earlier.

A distinction is thus clearly drawn between teaching the subject (only) and teaching students, and refutes the anti-professional defence that 'anyone who knows the subject can teach (the subject)'. If academic excellence is to be an attainable objective and not just a pious statement in a graduation address, then excellence in teaching must mean to teach well so that each student learns well. The good teacher has to be competent and therefore confident in managing the interactions of the variables identified as influencing student experience. Managing to teach well is an objective as well as the means of achieving that objective. Definitions of good teaching and student success provide a framework for the improvement of teaching performance, the development of appropriate teaching methods and for faculty development procedures. For example:

Eble (1976) provides a definition which encompasses previous considerations:

> 'Good teachers will be those who are master of a subject, can organise and emphasise, can clarify ideas and point out relationships, can motivate students, can pose and elicit useful questions and examples, and are reasonable, imaginative and fair in managing the details of learning'. (p 18)

And Parkyn (1967) after a comprehensive study of first year university students in New Zealand, offered a conclusion which is still very relevant:

> 'The final success of the students, however, depends not only on their ability but also upon their determination to succeed, the time that they can put into their studies, the conditions in which they live, their mental and physical health, the process of examination, teaching methods and many other circumstances.' (p 210)

As well as distinguishing between ability and student quality factors, this describes the context in which each student makes study decisions for a particular course in a programme of study. In their study of achievement motivation Covington and Omelich (1979) suggest that the achievement process should be reviewed in terms of 'the individual's efforts to protect and enchange a sense of competency'. This is the anxiety that eventually prompted McKeachie to develop learning skills programmes but which also requires teachers to incorporate specific learning skill development in their courses. Commonsense also applies to motivation as indicated in a conclusion reached by Beard and Senior (1980):

> '... motivation of students in universities and colleges is largely a matter of suitability of courses to their varied needs, initial experiences which enable them to adjust to independence and study methods appropriate to higher education, to stimulating

teaching and informative assessment of their performance.' (p 91)

Professionally, a university teacher should be competent in organising the course-related experiences of students and aware of related issues. With experience (and self appraisal) competence will become excellence as the teacher becomes expert in managing the interactions between subject and student with reference to contexts of time and place.

However, Genn (1982) in his study of the pursuit of excellence in university teaching in Australia, emphasises that teaching, however great its importance, is generally not the only thing that university teachers have to do. Genn cites Falk and Lee Dow (1971) and Thorpe and Schmuller (1954) as sources of ideas about excellence in teaching that correspond to the considerations already discussed.

So, with these samples of experience available and with awareness of the different contexts for teacher and student, what can be done to improve teaching performance?

As long ago as 1970, Powell commented:

> 'Many universities are experimenting with courses ranging from one day to two weeks in duration, which aim at making (new) teachers better acquainted with techniques of teaching and examining and, in general, sensitising them to the many problems which they will encounter in the course of their work. In this area there is no need for further research, since we already know what requires to be done; what is wanted now is the desire, the energy and the resources to get on and do it.' (p 206)

In the 1970s the Clinic to Improve University Teaching at the University of Massachusetts developed the teaching skills approach to the analysis and improvement of teaching. Their procedures were adapted for the development of a strategy for evaluating university courses to improve teaching performance (Clark, Imrie et al. 1977). Complementing courses on teaching and evaluation of teaching, access to the literature of insights and experiences of successful teaching is also available in journals and handbooks e.g. Bergquist and Phillips (1977).

Improving teaching performance is very much part of professional development which Gaff (1979) concludes has been put to the test and does work. But Clift and Imrie (1979) consider that effective professional development has little to do with attendance at courses:

> 'A major objective of any in-service programme must be to create, within the institution, an atmosphere ... in which the quality of teaching is seen as the intentional product of a number of considered decisions made by people at all levels within the institution.'

What is needed, therefore, are institutional policies and their implementation (deeds not words) for the improvement of teaching and learning. The basis of such policies is the requirement of competence and the recognition of excellence. Policies have been discussed elsewhere (Imrie, 1981) with reference to freedom and control; management, in pursuit of excellence, would affirm that 'those who implement the plans must make the plans' (Peters and Waterman, 1982). Policy issues will be discussed later with reference to staff development, and McKeachie (1975) stresses the provision of 'ample scope for commonsense' in any system that seeks to improve teaching performance.

CHANGES IN TEACHING METHODS

Changes in teaching methods will be discussed which stimulate students to be more active in learning and to take more responsibility for their learning. The teaching methods can be described as learning strategies managed by the teacher so that the student not only learns but knows that learning has taken place thus generating competence and confidence. Such strategies involve the skilled use of assessment not for the award of formal grades but to provide feedback to improve subsequent performance.

The teaching methods or strategies to be discussed are DIAGNOSTIC TESTING, MASTERY LEARNING, PROBLEM SOLVING and DISCUSSION TECHNIQUES. The changes are those which recognise and encourage individual difference and development within a framework of criterion referenced attainment. These methods can be used separately or in association, in the context of a course, and are discipline free. The changes in teaching methods are intended to involve teacher and student in solving the particular problem of optimising the limited but unique opportunities provided by a course for the acquisition and retention of meaningful learning.

Some definitions are called for. A course is a series of regular timetabled occasions when, at least, the time and place contexts for teachers and students are the same. All other perceptions might be different but much organisation is required for these encounters to take place. There is a set duration to the course, there are set assessment requirements and the rest of the time (for learning) is not controlled by the teacher but may be influenced by a teaching strategy.

Entwistle and Hounsell (1975) make a particular point about learning and teaching methods:

> 'In developing more effective methods it seems crucial that lecturers should be more aware of the basic principles of learning and of the wide individual differences, both in ability and in

learning style, which exist among students.' (p 9)

Novak (1980) shares useful insights about learning as the internalisation of new (course) knowledge, when he distinguishes between:

> 'rote learning wherein new knowledge is arbitrarily incorporated into cognitive structure, in contrast to meaningful learning wherein new knowledge is assimilated into specifically relevant existing concepts. (p 136)

Perry (1970) has noted that learning is influenced by the intellectual development of students in the college years and it is interesting for this international conference to note that Mason (1980) reported the work of Perry to the HERDSA Conference in Sydney, in her paper on the use of cognitive development models to guide teaching methods, based on her Master's studies at the University of Maryland.

DIAGNOSTIC TESTING was recommended and guaranteed to improve performance by Kozima (1983) last year at the Ninth IUT Conference and the advice was reported in the 'public' press:

> 'Most students are neither eager to hear a new lecture nor familiar with the material to be covered ... begin every new lecture with a 10 minute test on material covered in the previous lesson.'

This form of assessment provides a relevant opportunity for students to accept responsibility for learning, without fear of failure and with feedback to identify strengths and weaknesses. At the beginning of a course, diagnostic testing can be related to the entry characteristics indicated in the model in Fig 1; the results can confront the student with an appraisal of 'preparedness' for the course and also provide peer group profile information of interest to students as well as teachers.

Computer processes can make the results readily available and also provide the essential 'remedial' opportunities for students to do something about acquiring prerequisite knowledge. For example, tests show that students who have passed mathematics courses (i.e. examinations) at high school, do not have the knowledge assumed by university teachers; both teachers and students need to understand that reality. Diagnostic testing for course-specific study skills has been developed by Mahalski (1982). She designed a timetabled laboratory (as part of the course) on study skills and attribution of success. Attribution theory (Weiner et al. 1971) and her inventory of study skills are used to enable students to test (for themselves) the hypothesis that students who attribute success at their last major examination to internal courses, are more likely to score highly on an inventory of study skills than students who attribute their success to external causes. Mahalski's Academic Information

Inventory has three sub-scales of 25 items each:

- information acquisition (listening, note-taking, amount of study)
- information processing (summarising, trying to understand, memorising)
- student performance (writing reports, answering examination questions)

Students are informed that this inventory has been designed to

'(1) focus your attention on how you learn and hopefully introduce you to some new ways of learning;

(2) allow you to discover whether you have a better or worse set of learning skills than the average student.'

Diagnostic testing can thus be perceived by students as relevant to a course of study; it also introduces the student to 'locus of control' theory in a very practical way. Informally, of course, every time a teacher listens to and advises a student with a problem, 'diagnostic assessment' takes place.

MASTERY LEARNING also involves diagnostic assessment by providing opportunity for students to sit and resit tests (with feedback) until a mastery level of attainment (usually 80% or more) has been reached with reference to specified criteria. Although mastery learning procedures were used with success before 1968, it was in that year that Bloom (1968) and Keller (1968) published papers which provided comprehensive models for mastery learning. Bloom's learning through mastery approach was developed for secondary education, while Keller's 'Goodbye, Teacher ...' principles at the tertiary level are now widely referred to as Keller Plan or as a Personalised System of Instruction (PSI) or something like it (SLI)! In fact it is a system of personalised instruction (Imrie et al. 1980) which not only allows but also encourages the student to choose a level of attainment as an aim, and to work independently of the fixed pace of a class timetable. Assessment is without 'fear of failure' and
provides feedback with reference to criteria known to the student - conditions that are consistent with the 'best generalisation' which McKeachie (1975) could make about helping students learn.

Also in 1968 Dubin and Taveggia, after summarising nearly a hundred studies carried out over four decades on the effectiveness of various methods of college concluded that there was no measurable difference among truly different instruction methods (when evaluated by student performance on final examinations). Subsequently, Taveggia (1976) presented summary evidence that Personalised Systems of Instruction (incorporating mastery learning) are, indeed, more effective than traditional teaching methods. Kulik, Kulik and Smith (1976), using meta-analysis, came to a similar conclusion.

The principle of mastery has been identified as having special

significance for effective teaching, assessment and learning: for PSI and for conventional lecture-paced methods. There can be no compromise if universities aspire to standards of excellence (Imrie et al. 1980). In Sherman's words (1974):

> '... not only the student, but also the teacher must be creative, imaginative, and must earn his 'A'. It is dangerous, exciting and challenging, but teachers should not settle for less.'

The work of Bloom (1976), Getzels and Jackson (1962) and Gronlund (1970) is used to develop the concept of a two-tier structure of learning and assessment with reference to a suggestion by Nisbet (1971) that there should be two different types of assessment. If a course of study can be represented by objectives, these objectives should form the basis of indentifiable and assessable outcomes. Accordingly, in Fig 2:

> 'Tier I includes basic abilities identified as recall/application which are appropriate for the practice and performance conditions of criterion-referenced mastery learning. Tier II is associated with the higher abilities of problem-solving and consequently, of norm-referenced assessment of performance.' (Imrie, et al. 1980:116).

FIG. 2 A TWO-TIER STRUCTURE OF ASSESSMENT (Imrie et al., 1980)

	(BLOOM, 1956)	(GETZELS and JACKSON, 1962)	(GRONLUND, 1970)
TIER II PROBLEM-SOLVING (higher abilities)	EVALUATION SYNTHESIS ANALYSIS	'revising the known, exploring the undetermined, constructing what might be'	'development level outcomes'
TIER I RECALL APPLICATION (basic abilities)	APPLICATION COMPREHENSION KNOWLEDGE	'retaining the known, learning the predetermined, conserving what is'	'low-level outcomes as minimum essentials or prerequisites'

(*Note: APPLICATION is usually the highest level required for conventional 'problem-solving' as in examinations.)

PROBLEM SOLVING

Tier I (Fig. 2) incorporates a 'minimum essential' level of recognition (or recall) of familiar types of 'problems' and routine application of techniques which have been mastered. There is usually no redundancy or absence of required information to be used to produce a 'correct' answer. Tier II problem solving requires the development of abilities to deal with unfamiliar situations which require the identification and posing of a problem

before (pre)requisite skills can be applied. Decisions about information have to be made and different solutions evaluated. Essay writing is a common example of problem solving.

In a relatively new journal 'Higher Education Research and Development', Woods (1983a) gives details of the five stages considered necessary to introduce explicit training in problem solving into formal courses of study. As Editor of 'PS News', Woods has provided access to a wide range of successful experience 'to share ideas so that we can all bring to the learning situation the very best'. For example, Woods (1983b) brings to the attention of a readership in excess of 800, details of 'an excellent overview of PS' (Frazer, 1982) which includes an analysis of the reasons why students fail to solve problems:

> 'Students may <u>not start</u> a problem because they lack confidence or motivation, they have too much information or they cannot obtain an overview nor can they identify goals and subgoals. Students may start but <u>cannot finish</u> because of the above reasons and they lack and cannot recall the required knowledge, that knowledge is incorrectly recalled or applied, they fail to use items of knowledge given to them (in the problem statement), they fail to approximate and they become mentally fixed in a particular mode of thought.'

Frazer (1982) also recommends five steps to teach PS. In the same issue of 'PS News' (and in other issues) Woods (1983b) refers to the work of de Bono, which provides a final sample of problem solving experience and insight (slightly adapted):

> 'It is axiomatic that a student's knowledge and experience are limited. When determining a solution to a problem what matters is the way the student's mind uses the limited material at its disposal. Education has always regarded its prime duty to be transfer of knowledge, reinforced by the realities of traditional examinations, but the knowledge may not outlast the exams for which it is stored. The amount of knowledge that has to be transferred is increasing all the time and as a result the student today has much less time to think than ever before.
> Thinking can be treated as a learnable skill and is so taught in business and in computing. In business poor thinking means bankruptcy and in the computer world it means a waste of expensive computer time. In education, alas, it is undetectable. The convenience of problem-solving as one format for practising thinking is that there is a defined objective.' (de Bono, 1972;9-11)

DISCUSSION TECHNIQUES

Problem solving and thinking are indeed relevant to changes in teaching methods involving discussion techniques - the fourth example to be discussed. Discussion techniques have the potential to provide for the dynamic

interaction of all of the elements of Hyman's model; dynamic in the interactions within a specified timetabled context and developing with time over a programme of study. Managing to teach using discussion techniques requires discussion skills, organisational skills and a willingness to share responsibility with the students; it does not necessarily require the presence of the teacher. The principles of the 'Experiential Taxonomy' (Steinaker and Bell, 1979) are particularly relevant to learning through the experience of discussion. The experience of participating, identifying, internalising and disseminating can be summarised as 'I do not know what I think until I hear myself say it.' This process of articulating 'new' comprehension corresponds to Abercrombie's (1960) statement that 'discussion in a group does for thinking what testing on real objects does for seeing.'

Providing such references, however, is unlikely to change teaching methods but it is important for faculty who are trained to learn by reading to be aware of the literature of small group teaching and learning. For staff development purposes, to introduce new teaching methods and to improve teaching performance, files of selected readings (e.g. Imrie 1973, Imrie 1980) provide an opportunity for faculty to learn from experience; also a context for discussion. Such readings invariably include extracts from accounts of experience in the UK. For example, Abercrombie (1979) has written about the aims and techniques of group teaching as an authority whose work has provided standards of attainable excellence in teaching and learning. She has set out the changes that are needed in teaching methods:

> '(a) the main aim of education must no longer be thought of as that of transmitting information, but rather that of encouraging autonomous learning; and consequently
>
> (b) the relationship between teacher and student must be regarded not as that of giver and receiver of information, but as that of co-operating explorers of knowledge;
>
> (c) the relationship between pupils, instead of being ignored as of neutral or negligible value in the education process, must be recognized and fostered as a powerful medium for interactive or collaborative learning.' (Abercrombie, 1978:2)

Bligh (1975) has a comprehensive chapter on discussion methods which is based on one of the programmes in his excellent radio series on teaching and learning in higher education (Bligh, 1973). The chapter starts with a discussion of 'groups without teachers' which can be effective whether timetabled or not.

In a study of seminar work in higher education Rudduck (1978) reviews the relevance of discussion methods to a wide range of disciplines including those

which traditionally 'have no time' for such methods. As with Abercrombie, she provides an excellent opportunity for faculty to read and benefit from successful education experiences. For example, she refers to the work of Nisbet (1966) whose 'statements worth making' discussion method with senior students develops interaction and autonomy.

An example of USA experience influencing UK development of discussion techniques is that of Hill's (1969) model which has been adapted by Northedge (1975) and by Gibbs (1977) for Open University students. An excellent introduction to these sources of experience is the paper by Stanton (1982) which also provides insight into faculty development. Also from Australia, Brewer (1979) has made an impressive contribution to the improvement of teaching methods with her work on group teaching strategies for promoting individual skills in problem solving in botany.

Another compilation of samples of experience is provided by Collier (1983) writing about the management of peer-group learning with particular reference to syndicate methods in higher education.

> 'In a syndicate-based course ... the bulk of the work consists of a series of assignments carried out on a co-operative basis by the syndicates acting as teams, for much of the time.' (p 3)

Syndicates work together to solve problems and, as with other successful discussion techniques, students develop discussion skills such as listening and note-making; in groups, student collaboration means that more sources of information are used more efficiently in response to well-structured tasks organised by the teacher/consultant. The basic principle of sub-groups can be used successfully with classes of any size, in a lecture, laboratory or seminar.

For discussion techniques to be effective in combination with other teaching methods, staff and students need training to be able to realise the potential of the interaction opportunities made available. Management of discussion requires structure; useful insights can also be obtained from research experiences of staff development in management training as described by Rackham, et al. (1971). The implications of an introductory small group development programme for academic staff are discussed by Imrie and Murray (1980).

CHANGES IN STAFF/FACULTY DEVELOPMENT

In this paper there has been an attempt to sample the experience of a range of people who have written to share their insights about the complexity

of higher education. In particular reference has been made to the considerable experience of McKeachie. One final comment is worth considering with reference to his concern that there should be 'ample scope for commonsense' in systems devised to assess teaching effectiveness. McKeachie (1975) adds:

> 'I might also point out that any of the criticisms of assessment of teaching may equally well be levelled against our assessment of student learning. I have noted no reluctance on the part of professors to undertake the complex task of assessing students.' (p 76)

Of course, as Genn (1982) points out, teaching is not the only professional responsibility which faculty have; other responsibilities are research (and consultancy) and service (to university and community). Although the terms staff development and faculty development are still used, more attention is now being given to professional development as a more comprehensive concept which includes all the professional activities and responsibilities of academic staff (Imrie, 1981). If McKeachie's comment can be widened to apply to assessment of professional performance then it has a significance for professional development similar to the significance that assessment of student performance has for student learning. Assessing students and appraising teaching are considerations addressed by Clift and Imrie (1981).

While faculty have considerable pre-service training in matters related to subject competence there are aspects of research such as funding and management of projects, supervision of research students, that are relevant to programmes of professional development and assessment of performance. Aspects of teaching responsibility already mentioned in this paper include course design and management, development of student learning skills, and assessment of student performance. A particular aspect of service responsibility relates to development of professional skills required to work effectively in a group 'to solve problems.' Faculty spend a great deal of time in groups called committees to which the principles discussed earlier, of problem solving and effective discussion, are very relevant.

The changes that are taking place in different universities and in different university systems reflect movement towards the professionalisation of departments and universities in a context that provides for freedom of thought and control of quality. Freedom and control are issues relevant to members of a profession who should accept responsibility for the practice of the profession (Imrie (1981). These issues of 'institutional management' and 'staff autonomy' (Fordham and Ainley, 1980) can be used to polarise argument or to optimise action.

Nine years after Powell (1970) asserted that 'we already know what

requires to be done' (about the development of teaching skills), Gaff (1979) made a comment about experiences of improving university teaching in the USA:

> 'The amount of practical experience that has been gained in the practice of faculty development is in fact extensive. On the basis of this accumulated experience and emerging positive evaluations, it is now possible to conclude that, in general, professional development has been put to the test and it does work.' (p 245)

Another international conference (at Oxford: British Council, 1979) evolved the following definition of professional development (see also Greenaway and Harding, 1978:12):

> 'Institutional policies, practices and programmes directed at the skills, knowledge and attitudes of academic staff and designed to assist them to meet more fully their own, student and institutional needs.'

The implications of implementing policy as well as formulating policy have to be considered by the people involved and there is obvious correspondence between the above definition and the development model offered by Francis (1975) for the 'institutional process which seeks to modify the attitudes, skills and behaviour of faculty members toward greater competence and effectiveness in meeting student needs, their own needs, and the needs of the institution.'

Jones and Imrie (1983) report a review of professional development policies for academic staff in Australia and New Zealand, and consider two principal areas: career development and the work of faculty. Most Australian universities make provision for an academic development unit (Johnson, 1982) but intrinsic implementation of professional development policy depends very much on the 'attitude, skills and behaviour of the head of department' (HOD). Of the 12 (out of 19) Australian universities responding (in 1981) only two considered that new HODs were prepared in any way for their new responsibilities. If a university can be considered as a business organisation the lack of training provision for 'middle management executives' can have very serious consequences if the organisation wishes to be identified with excellence, or make changes towards that goal.

Stone and Silverthorne (1983) consider that change is a fact of life and that a climate for excellence can be created in an academic environment. However,

> '... the issue facing universities is not one of deciding how to adapt to change but rather being able to develop strategies to plan, direct and control change.' (p 45)

They describe a change process based on a model proposed by Batten (1966); they also draw attention to the need to associate performance standards with the goal of excellence and refer to the Australian Vice-Chancellors' working

party on academic staff development which recommends:

> '... a formal evaluation programme for all staff involving systematic and regular review of performance in all roles. Such evaluation should be comprehensive both in terms of activities evaluated and sources of evaluative information used. Evaluation should be undertaken for both formative and summative purposes.' (AVCC, 1981: xi)

The AVCC Report (1981) is a most interesting document and it will have far-reaching effects in the Australian university system. The working party was convened by the Vice-Chancellor of the University of Queensland, who had previously been responsible for the triennial evaluation scheme at Simon Fraser University. Two Canadian sources of experience are introduced in the appendices of the report, one an extract from the 'Guide to the teaching dossier' (Shore et al. 1980), the other an outline of a comprehensive evaluation program (Murray, 1980). Both of these Canadian experiences have particular significance for professional development since they emphasise the comprehensive nature of the professional responsibilities of faculty and the corresponding requirement to use appropriate sources of evaluative information both for judgement and for improvement. Murray's comprehensive plan for the evaluation of teaching is thoroughly researched and documented; it provides for the 'management procedures which are needed to help encourage good academic practice' as recommended in the report 'Excellence in Diversity' (SRHE, 1983a). This report arises out of a programme of study organised by the Society for Research into Higher Education (SRHE) and financed by the Leverhulme Trust. Ten volumes report the results of a study into the future of higher education in the UK (SRHE, 1983b). The report (SRHE, 1983a) on excellence also makes the link with quality of performance:

> 'All recommendations to improve professional standards and to create new opportunities for learners and teachers will be ineffective if there is no mechanism to evaluate professional standards and to assess the new opportunities that are offered.

While advocating professional development units the report states that there is an inadequate basis of knowledge for professional development. This seems to challenge the conclusion of Gaff (1979) and others but it is supported by Cannon (1983) who suggests that the professional development of Australian university teachers has been principally an act of faith. His analysis of why university teaching has not responded readily to attempts to improve it, produced five conclusions about professional development:

'1 The problem is extraordinarily complex

2 Attempts to solve the problem are novel

3 There was, and still is, a weak theoretical and knowledge base for action
4 The resource base for change is limited
5 Is professional development the best focus for improvement strategies?' (p 31)

In raising the last question Cannon (1983) refers to the distinction made by Gaff (1979) between professional development, instructional development and organisational development. With limited resources a choice may be required.

In a discussion of professional development policy, Imrie (1981) gives two examples of theoretical models for change and implementation. In addition, a theoretical base is provided by the work of Steinaker and Bell (1979) in terms of their experiential taxonomy which provides the sequence 'for intrinsic professional development and for teacher change.' Like other taxonomies, the experiential taxonomy was developed with particular reference to secondary education but the principles are relevant to university or tertiary education.

This theoretical base can be recognised in professional development projects commissioned by the Higher Education Research and Development Society of Australasia (HERDSA) - a 'down-under' counterpart of SRHE. The first of these projects was the design of a three-day 'Evaluative Skills Workshop' which was then taken to major cities in the Australian states and to New Zealand. A further development was to provide opportunity for people to be trained in conducting the workshop so that the experience could be disseminated effectively within institutions. 'Informed Professional Judgement' (Roe and McDonald, 1984) is the outcome and is a practical review of principles and procedures for the evaluation of courses, course units and teaching. In addition, HERDSA has published a booklet on planning and conducting reviews (McDonald and Roe, 1984) and a second national workshop has been developed for heads of departments.

Such examples of initiatives for professional development taken by organisations like SRHE and HERDSA indicate another vital contribution to the search for academic excellence. A more recent organisation, the Pacific Rim Association for Higher Education (PRAHE), indicates growth in this area as well. The annual conferences and publications of such organisations provide an important national and regional context for the developments described in this paper.

IN CONCLUSION

It is appropriate to conclude this paper with two final samples of

experience cited in the paper 'Managing to Teach Together' (Imrie, 1974), since both refer to excellence:

> 'What is at stake is the ability of universities to adapt to the economic and social demands of society, whilst at the same time remaining centres of intellectual excellence, discovery and innovation.' (Layton, 1968: viii)
>
> 'Many university teachers - though potentially excellent at teaching - have not been interested enough in teaching or motivated strongly enough to be concerned even to teach well what they know so well!' (Niblett, 1974: 121)

The samples of experience discussed in this paper have been selected to show that, in many instances, the search for excellence has been successful. Indeed many papers presented at this conference complement the experiences selected in this paper. Other conference papers address the issues raised by the above quotes. The principal issue is the quality of management: at institutional level, at departmental level and at personal level. Learning from experience is a proper basis for managing to teach well enough so that the probable outcome is excellence in teaching and learning.

REFERENCES

ABERCROMBIE, M.L.J. Aims and Techniques of Group Teaching, SRHE Monograph 12, Society for Research into Higher Education, University of Surrey (1979)

ABERCROMBIE, M.L.J. The Anatomy of Judgement, Harmondsworth: Penguin (1960)

ABERCROMBIE, M.L.J. and TERRY, P.M. Talking to Learn: Improving teaching and learning in small groups, SRHE Monograph 32, Society for Research into Higher Education, University of Surrey (1978)

AUSUBEL, D.P. Educational Psychology: A Cognitive View, New York: Holt, Rinehard and Winstone (1968)

AVCC Academic Staff Development, Occasional Paper No. 4, Canberra:Australian Vice-Chancellors' Committee (1981)

BATTEN, J.D. Beyond Management by Objectives, American Management Association (1966)

BEARD, R.M. and SENIOR, I.J. Motivating Students, London: Routledge and Kegan Paul (1980)

BERGQUIST, W.H. and PHILLIPS, S.R. A Handbook for Faculty Development Vol. 2 The Council for Advancement of Small Colleges, Washington D.C. (1977)

BLIGH, D. 'Thinking in Groups', Programme 5 in Teaching and learning in Higher Education, 9 March 1973. A series of programmes broadcast by BBC Radio 3 Producer - HEFFERMAN, M. (1973)

BLIGH, D. 'Discussion Methods' (152-172) in Bligh, D. et al. Teaching Students Exeter University Teaching Services (1975)

BLOOM, B.S. (Ed.) Taxonomy of Educationsl Objectives: Handbook 1, Cognitive Domain, David McKay (1956), Longman (1972)

BLOOM, B.S. Human Characteristics and School Learning, New York: McGraw-Hill (1976)

BLOOM, B.S. Learning for Mastery', Evaluation Comment, 1, 2 UCLA-CSEIP (1968)

BREWER, I.M. 'Group Teaching Strategies for Promoting Individual Skills in Problem-Solving', Programmed Learning and Educational Technology, 16, 2, 111-128 (1979)

BRITISH COUNCIL 'The Training and Professional Development of Academic Staff: Practice and Purpose', An invited international conference, Oxford (1979)

CANNON, R.A. 'The Professional Development of Australian University Teachers: An Act of Faith?' Higher Education 12, 19-33 (1983)

CLARK, M., IMRIE, B.W., JOHNSTON, L.C. and MALCOLM, W.G. 'A Strategy for Evaluating University Courses' 274-281, Aspects of Educational Technology XI: The Spread of Educational Technology, London: Kogan Page (1977)

CLIFT, J.C. and IMRIE, B.W. Assessing Students, Appraising Teaching, London: Croom Helm (1981)

CLIFT, J.C. and IMRIE, B.W. 'New Zealand - working with teachers towards course improvement' Staff Development in Higher Education, London: Kogan (1979)

CLINIC, 'The teaching skills approach to the analysis and improvement of teaching', The Clinic to Improve University Teaching, University of Massachusetts (1977)

COVINGTON, M.V. and OMELICH, C.L. 'Are Causal Attributes Causal? A path analysis of the cognitive model of achievement motivation.' Journal of Personality and Social Psychology 37, 9, 1487-1504 (1979)

COLLIER, G. (ed.) The Management of Peer-Group Learning: Syndicate methods in Higher Education, SRHE Monograph 55, Society for Research into Higher Education, University of Surrey (1983)

DE BONO, E. Children Solve Problems London: Penguin Education (1972)

DUBIN, R and TAVEGGIA, T.C. The Teaching-Learning Paradox, Centre for the Advanced Study of Educational Administration, University of Oregon (1968)

EBLE, K.E. The Craft of Teaching, San Francisco: Jossey Bass (1976)

ENTWISTLE, N.J. (Ed.) Strategies for Research and Development in Higher Education, Amsterdam: Swets and Zeitlinger (1976)

ENTWISTLE, N. and HOUNSELL, D. (Eds.) How Students Learn, Reading in Higher Education 1, Institute for Research and Development in Post-Compulsory Education, University of Lancaster (1975)

FALK, B and LEE DOW, K. The Assessment of University Teaching, London: Society for Research into Higher Education, Monograph 16 (1971)

FORDHAM, A. and AINLEY, J. The Evaluation of Staff Development in Technical and Further Education: A Proposed Methodology, Melbourne: Australian Council for Educational Research (1980)

FRANCIS, J.B. 'How do we get there from here? - Programme Design for Faculty Development' Journal of Higher Education, XLVI, 6, 719-732 (1975)

FRAZER, M.J. 'Solving Chemical Problems' Chem. Soc. Review, 11, 171 (1982)

GAFF, J.C. 'The United States of America - toward the improvement of teaching' in TEATHER, D.C.B. (Ed.) Staff development in Higher Education, London: Kogan Page (1979)

GENN, J.M. The Pursuit of Excellence in University Teaching in Australia, Sydney: HERDSA (1982)

GETZELS, J.W. and JACKSON, P.W. Creativity and Intelligence, New York: John Wiley and Sons (1962)

GIBBS, G. Learning to Study: A Guide to Running Group Sessions, Institute of Educational Technology, The Open University (1977)

GOLDSCHMID, B. and GOLDSCHMID, M.L. 'Enabling students to learn and participate effectively in higher education', Journal of Personalized Instruction, 1, 2, 70-75 (1976)

GREENAWAY, H. and HARDING, A.G. The Growth of Policies for Staff Development, SRHE Monograph 34, Society for Research into Higher Education, University of Surrey (1978)

GRONLUND, N.E. Stating Objectives for Classroom Instruction, New York: Macmillan (1978)

HILL, W.F. Learning Thru Discussion, London: Sage Publications (1969)

HYMAN, R.T. Ways of Teaching, New York: Lippincott (1970)

IMRIE, B.W. 'Managing to Teach - Together' Proceedings of the International Conference on Improving University Teaching, ppB19-35, University of Maryland, Heidelberg, May 1975

IMRIE, B.W. (Ed.) Small Group Methods in Higher Education: Resource File, Standing Committee on Teaching Techniques, University of Leeds (1973)

IMRIE, B.W. (Ed.) Small Group Development Programme: Reference File, Tertiary Education Institute, University of Queensland (1980)

IMRIE, B.W. 'Grading and Student Quality', Occasional Paper 8, University Teaching and Research Centre, Victoria University of Wellington (1983)

IMRIE, B.W. and MURRAY, H.G. 'Implications of a Small Group Development Programme for Academic Staff', Conference on Technology in Education, The Australian Society of Educational Technology, Melbourne (1980)

IMRIE, B.W., BLITHE, T.M. and JOHNSTON, L.C. 'A Review of Keller Principles with reference to mathematics courses in Australia', British Journal of Educational Technology, 11, 2, 105-121 (1980)

IMRIE, B.W. 'Freedom and Control in Higher Education: Who needs a policy' Higher Education, 10, 551-572 (1981)

JOHNSON, R. Academic Development Units in Australian Universities and Colleges of Advanced Education, Canberra: Commonwealth T.E.C. (1982)

JONES, J. and IMRIE, B.W. 'Professional Development Policies for Academic Staff in Australia and New Zealand' in MOSES, I. (Ed.) Research and Development in Higher Education 6, 137-146 Sydney: HERDSA (1983)

KELLER, F.S. 'Good-bye, Teacher .....' Journal of Applied Behaviour Analysis 1, 78-89 (1968)

KOZIMA, H. 'Tests advocated for every lecture' The Chronicle of Higher Education 18, July 13 1983

KRATHWOHL, D.R. (Ed.) Taxonomy of Educational Objectives: Handbook 2, Affective Domain, David McKay (1964), Longman (1972)

KULIK, J.S., KULIK, C-L.C. and SMITH, B.B. 'A meta-analysis of outcome studies of Keller's personalized system of instruction', American Psychologist 34, 4, 307-318 (1979)

LAYTON, D. (Ed.) University Teaching in Transition Edinburgh: Oliver and Boyd (1968)

MAHALSKI, P.A. 'Attribution of Success and Study Skills' Department of Psychology, Otago University (private communication, 10.6.82)

MASON, K. 'Issues in tertiary teaching: the use of cognitive development models to guide teaching method', pp 49-61, in MILLER, A.H. (Ed.) Research and Development in Higher Education 3, Sydney: HERDSA (1980)

McDONALD, R.H. and ROE, E. Planning and Conducting Reviews in colleges and universities, Sydney: HERDSA (1984)

McKEACHIE, W.J. 'Student Anxiety, Learning and Achievement' Engineering Education, 73, 7, 724-30 (1983)

McKEACHIE, W.J. and KULIK, J.A. 'Effective College Teaching' Review of Research in Education 3, 165-209 (1975)

McKEACHIE, W.J. 'The Decline and Fall of the Laws of Learning' in ENTWISTLE, N.J. and HOUNSELL, D.J. (Eds.) How Students Learn, University of Lancaster (1975)

McKEACHIE, W.J. 'Instructional Psychology' Annual Review of Psychology Vol. 25 (1974)

McKEACHIE, W.J. 'Assessing Teaching Effectiveness: Comments and Summary' pp73-78 in Proceedings of the (First) International Conference on Improving University Teaching, Heidelberg (1975)

McLEAN, L. 'Rethinking Achievement Testing' E & M Newsletter No. 40, Ontario Institute for Studies in Education (1983-84)

MURRAY, H.G. 'A comprehensive plan for the evaluation of teaching at the University of Queensland' Tertiary Education Institute, University of Queensland (1980)

NIBLETT R.W. Universities between Two Worlds University of London Press (1974)

NISBET, J. 'Innovations and necessary developments in Assessment in Higher Education' in Innovation in Higher Education Society for Research into Higher Education, University of Surrey (1972)

NISBET, S. 'A Method for Advanced Seminars' Universities Quarterly, 20, 349-355 (1966)

NORTHEDGE, A. 'Learning through discussion in the Open University' Teaching at a Distance, 2, 10-19 (1975)

NOVAK, J.D. 'Methodological Issues in Investigating Meaningful Learning' in ARCHENHOLD, W.F. et al. (eds.) Cognitive Development Research in Science and Mathematics, University of Leeds, 129-148 (1980)

PARKYN, G.W. Success and Failure at the University Vol. 2, Wellington: NZCER (1967)

PERRY, W.G. Jr. Forms of Intellectual and Ethical Development in the College Years, New York: Holt, Rinehart and Winston (1970)

PETERS, T.J. and WATERMAN, R.H. In Search of Excellence: Lessons from America's Best-Run Companies, New York: Harper and Row (1982)

POWELL, J.P. 'University Teaching Methods' in BUTCHER, H.J. and PONT, H.B. (Eds.) Education Research in Britain 2, University of London Press (1970)

RACKHAM, N., HONEY, P., COLBERT, M.J., and others, Developing Interactive Skills, Wellens Publishing (1971)

ROE, E. and McDONALD, R.J. Informed Professional Judgement: a guide to evaluation in post-secondary education, University of Queensland Press (1984)

RUDDUCK, J. Learning through Small Group Discussion: A Study of Seminar Work in Higher Education, SRHE Monograph 33, Society for Research into Higher Education, University of Surrey (1978a)

SHERMAN, J.G. (Ed.) PSI - Personalized System of Instruction: 41 Germinal Papers, W.A. Benjamin (1974)

SHORE, B.M. et al. 'Guide to the Teaching Dossier: its preparation and use', CAUT Bulletin 15-23 (May, 1980)

SMITH, B.O. 'A Concept of Teaching', Teachers College Record 61,229-241 (1960)

SRHE Programme of Study into the Future of Higher Education. The Leverhulme Series, Society for Research into Higher Education, University of Survey (1983b)

SRHE Excellence in Diversity, The Leverhulme Report, SRHE, University of Surrey (1983a)

STANTON, H. 'Improving the University Tutorial', Improving College and University Teaching, 30, 2, 87-90 (1982)

STEINAKER, N.W. and BELL, M.R. The Experiential Taxonomy, New York: Academic Press (1979)

STONE, B. and SILVERTHORNE, R.A. 'Creating a climate for excellence in an academic environment' in MOSES, I (Ed.) Research and Development in Higher Education 6, 35-45 Sydney: HERDSA (1983)

TAVEGGIA, T.C. 'Personalized Instruction: a summary of comparative research, 1967-1974', American Journal of Physics, 44, 11, 1028-1033 (1976)

THORPE, L.P. and SCHMULLER, A.M. Contemporary Theories of Learning with Application to Education and Psychology, New York: Ronald Press (1954)

VERNON, P.E. The Structure of Human Abilities London: Methuen (1961)

WOODS, D.R. (Ed.) PS News 27, Department of Chemical Engineering, McMaster University (1983b)

WOODS, D.R. 'Introducing Explicit Training in Problem Solving into our Courses', Higher Education Research & Development, 2, 1, 79-102 (1983a)

WEINER, B., FREIZE, I., KUKLA, A., et al. Perceiving the Causes of Success and Failure, New York: General Learning Press (1971)